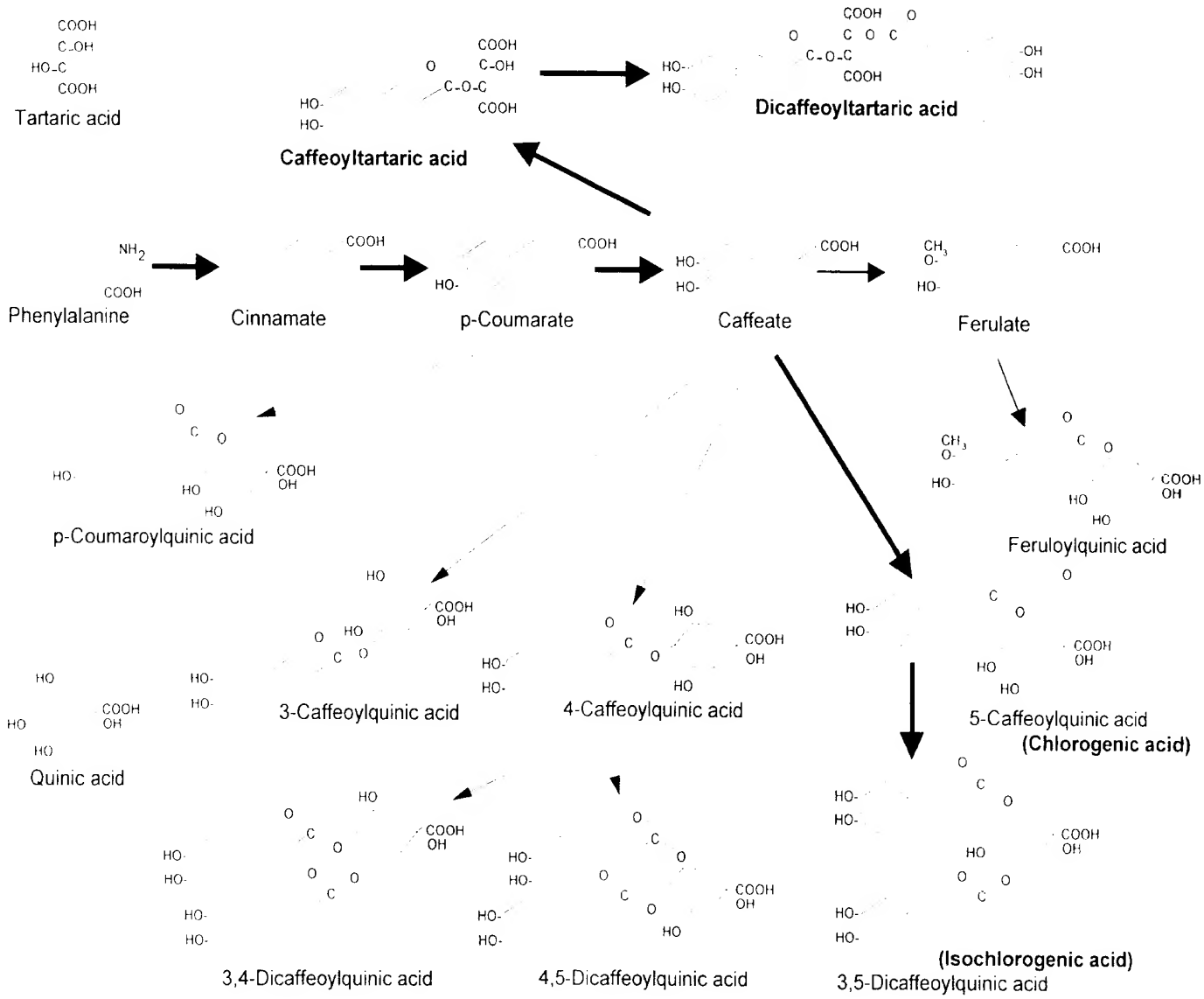
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Caffeoyltartaric acid
Dicaffeoyltartaric acid
Phenylalanine
Cinnamate
p-Coumarate
Caffeate
Ferulate
p-Coumaroylquinic acid
Feruloylquinic acid
3-Caffeoylquinic acid
4-Caffeoylquinic acid
5-Caffeoylquinic acid
(Chlorogenic acid)
Quinic acid
3,4-Dicaffeoylquinic acid
4,5-Dicaffeoylquinic acid
(Isochlorogenic acid)
3,5-Dicaffeoylquinic acid

Figure 1

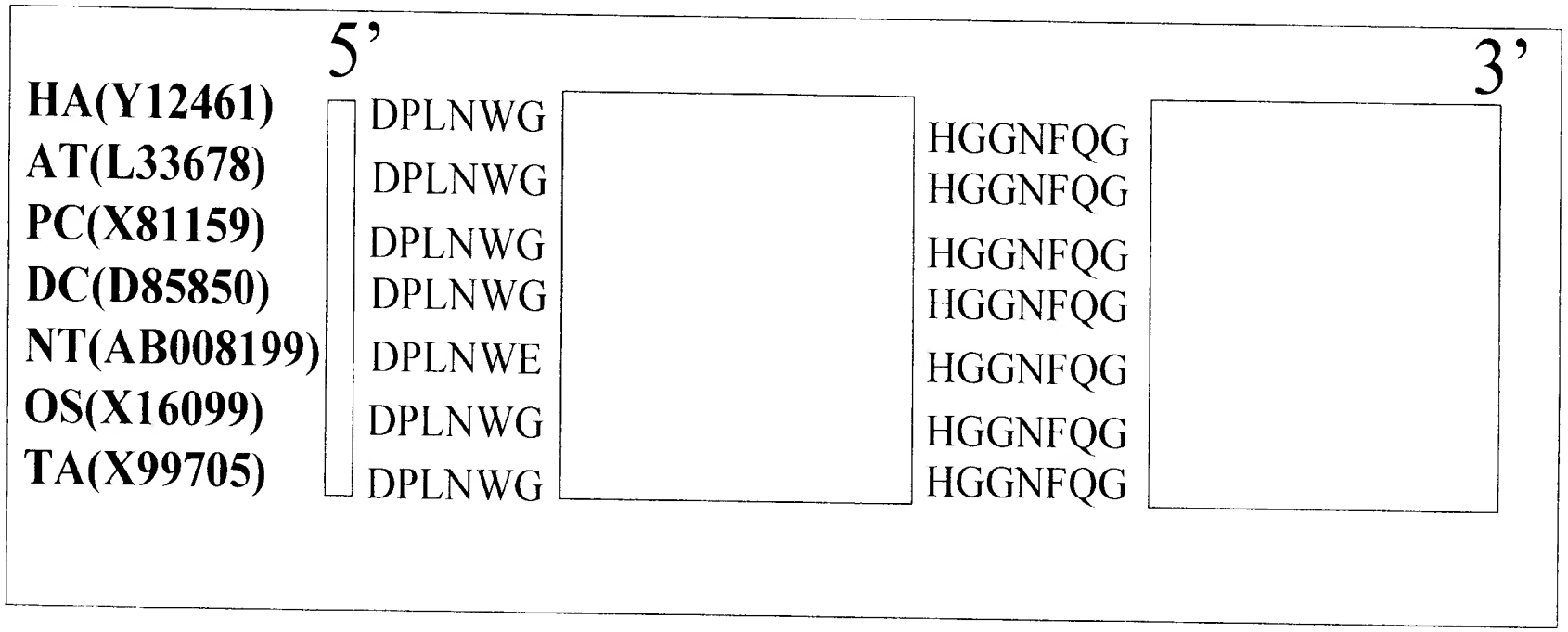
5'
3'
HA(Y12461)
AT(L33678)
PC(X81159)
DC(D85850)
NT(AB008199)
OS(X16099)
TA(X99705)
DPLNWG
DPLNWG
DPLNWG
DPLNWG
DPLNWE
DPLNWG
DPLNWG
HGGNFQG
HGGNFQG
HGGNFQG
HGGNFQG
HGGNFQG
HGGNFQG
HGGNFQG

Figure 2

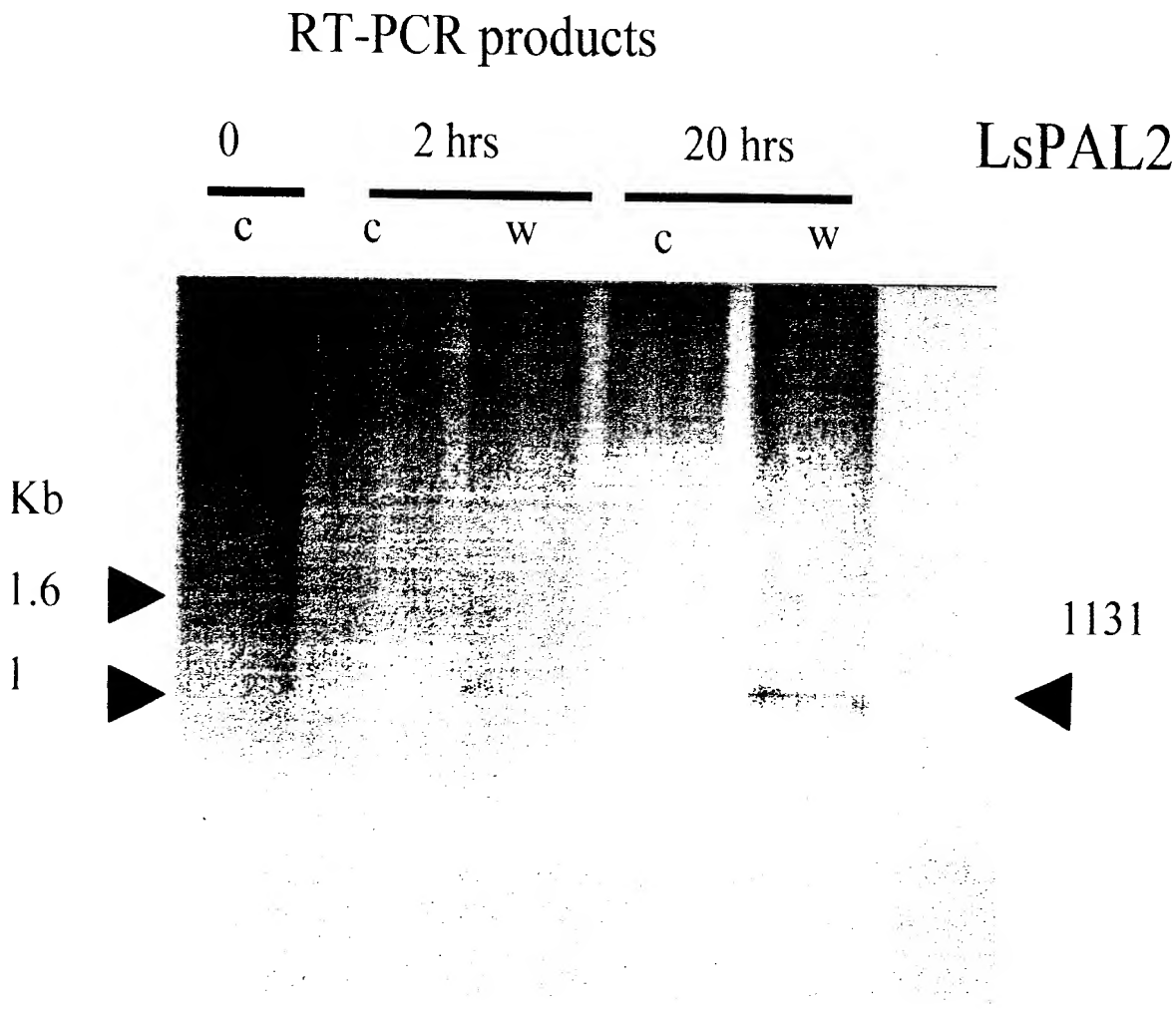

Figure 3

Domains

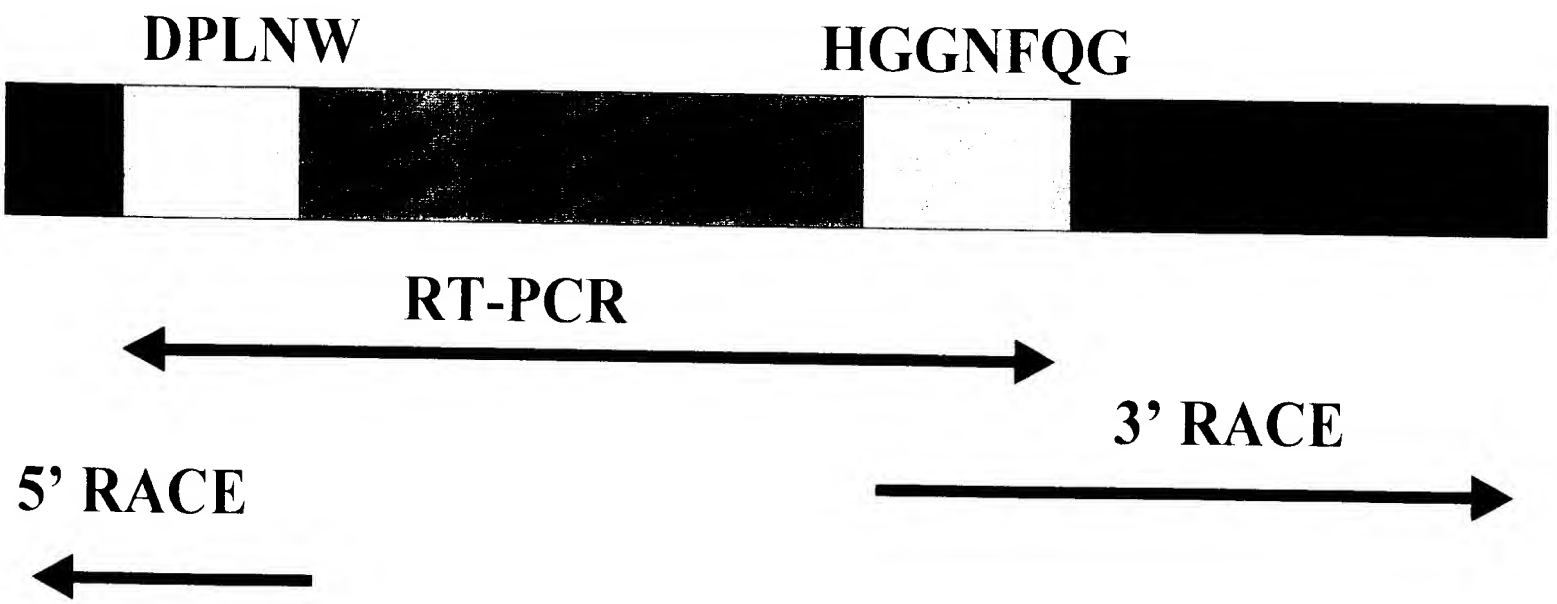

Figure 4

PAL1

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 121 GGAGAACGGT AATCACGTTA ATGGAGTCGT TAATGAGTTG TGCATCAAGG ATCCATTGAA
 181 CTGGGGAGTT GCAGCGGAGG CGTTGACCGG AAGTCACCTT GATGAGGTGA AGAAGATGGT
 241 TGCGGAGTTC AGAAAGCCGG TGGTGAAGCT CGGAGGAGAG ACGCTTACAG TTTCTCAGGT
 301 GGCGGGGATC GCAGCTGCTA ATGACAGTGA CACCGTGAAG GTGGAGCTGT CGGAAGCCGC
 361 GAGGGCTGGA GTTAAGGCGA GTAGTGATTG GGTTATGGAG AGCATGAATA AAGGAACTGA
 421 TAGTTATGGT GTCACCACCG GCTTCGGCGC CACCTCTCAC CGGAGAACTA AGCAAGGCGG
 481 TGCTTTACAG AAGGAGCTCA TTAGATTTTT GAACGCCGGA ATATTCGGCA ATGGAACGGA
 541 AACAAGCCAC ACACTTCCAC ATTCAGCCAC CAGAGCCGCC ATGATCGTCA GAATCAACAC
 601 CCTCCTCCAG GGTTACTCCG GCATCCGATT CGAGATCTTG GAAGCCATCA CCAAGTTCCT
 661 TAACAACAAC ATCACCCCTT GTTTACCCCT CCGTGGAACC ATCACCGCCT CCGGTGACCT
 721 TGTCCCATTA TCATACATCG CCGGCCTCTT AACCGGCCGC CCCAACTCCA AAGCCGTTGG
 781 CCCCACCGGA GAAGTCCTCA ATGCCGAAAA GGCCTTCGCT GCAGCCGGAG TTGAAGGTGG
 841 GTTCTTCGAG TTACAGCCGA AAGAAGGGCT AGCACTTGTT AACGGCACCG CCGTGGGGTC
 901 CGGGATGGCT TCCATGGTTC TATTTGATGC TAATGTACTT GCGTTGTTGT CGGAAGTGTT
 961 ATCGGCGATC TTCGCTGAGG TTATGCAAGG GAAGCCGGAG TTTACCGATC ACTTGACACA
1021 CAAATTGAAG CATCACCCTG GTCAAATCGA GGCGGCGGCG ATCATGGAGT ATATTTTGGA
1081 CGGAAGCGAT TACGTCAAGG CGGCGCAAAA GGTCCACGAA ATGGACCCGT TACAGAAACC
1141 AAAACAAGAT CGTTATGCTC TCCGTACATC TCCCCAATGG CTCGGACCTC AAATCGAAGT
1201 AATCCGATCA TCAACCAAAA TGATCGAGAG GGAAATCAAT TCCGTCAACG ACAACCCATT
1261 GATCGACGTT TCCAGAAACA AAGCTTTACA CGGTGGTAAC TTCCAAGGAA CCCCAATCGG
1321 AGTTTCCATG GACAACACCC GTCTCGCCAT TGCTGCAATC GGAAAACTCA TGTTCGCTCA
1381 ATTTTCTGAG CTGGTTAACG ATTTCTACAA CAATGGATTA CCATCGAATC TCTCCGGTGG
1441 ACGTAACCCT AGTTTGGACT ACGGGTTCAA AGGTGGAGAA ATCGCCATGG CTTCTTACTG
1501 TTCTGAGCTT CAGTTTCTCG CAAATCCAGT CACCAACCAT GTTCAAAGCG CCGAACAACA
1561 CAATCAAGAC GTTAATTCTC TCGGATTAAT TTCAGCGAGG AAAACCGCAG AAGCAGTCGA
1621 CATCTTAAAA CTCATGTCGT CGACATACTT AGTCGCTCTA TGCCAATCCA TCGATTTACG
1681 CCATTTGGAA GAGAACATGA AATCGACAGT GAAGAACACC GTAAGCCAAG TCGCGAAAAA
1741 GGTCCTCACC ATGGGCGTCA ACGGCGAGCT CCACCCGTCG AGATTCTGCG AGAAAGATCT
1801 CCTCCGTGTT GTTGATCGTG AATACGTCTT CGCTTACATC GACGACGTTT GCAGCGGCAC
1861 ATACCCATTA ATGCAGAAGC TCCGACAGGT TCTGGTCGAC CACGCTCTAA ACAACGGCGA
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2101 GGAGCTCGGC AGAGGGTTTT TGACCGGAGA AAAGGTGACG TCGCCGGGAG AGGAGTTCGA
2161 CAGGGTGTTC ACGGCGATGT GCAAAGGTCA AATTATTGAT CCGTTGTTGG AGTGTCTTGG
2221 AGGGTGGAAT GGGGAACCTC TTCCAATATG TTAGGAAAGT GAGTGTGAAA CCGTTTGAAT
2281 TGTATTTGTA ATATTCTGTT TTTTTTTTTT TTTTTTAAAT TTTATTTGCA TTTAATATCT
2341 CATCAAAGAC TTCCACTTTC AAGTGTGGTG TATGTGGTTG TAAATCATAT ATATTAACTT
2401 ATTATTTTTG CTAAAAAAAA AAAAAAAAAA AAAAAAAAAA AA
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Figure 5

Sequence I.D. No. 3

PAL1

translation="MENGNHVNGVVNELCIKDPLNWGVAAEALTGSHLDEVKKMVAEFRKPVV
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TGFGATSHRRTKQGGALQKELIRFLNAGIFGNGTETSHTLPHSATRAAMIVRINTLLQGY
SGIRFEILEAITKFLNNNITPCLPLRGTITASGDLVPLSYIAGLLTGRPNSKAVGPTGEVLN
AEKAFAAAGVEGGFFELQPKEGLALVNGTAVGSGMASMVLFDANVLALLSEVLSAIFA
EVMQGKPEFTDHLTHKLKHHPGQIEAAAIMEYILDGSDYVKAAQKVHEMDPLQKPKQD
RYALRTSPQWLGPQIEVIRSSTKMIEREINSVNDNPLIDVSRNKALHGGNFQGTPIGVSM
DNTRLAIAAIGKLMFAQFSELVNDFYNNGLPSNLSGGRNPSLDYGFKGGEIAMASYCSE
LQFLANPVTNHVQSAEQHNQDVNSLGLISARKTAEAVDILKLMSSTYLVALCQSIDLRH
LEENMKSTVKNTVSQVAKKVLTMGVNGELHPSRFCEKDLLRVVDREYVFAYIDDVCSG
TYPLMQKLRQVLVDHALNNGETEKNTNTSIFQKIATFEEELKVLLPKEVEGVRIAYEND
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GGWNGEPLPIC"

Figure 6

Sequence I.D. No. 1

PAL2

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GGAGTCATTAAAGGGTAGTCATTTAGACGAGGTGAAGCGGATGGTGGCGGAGTTTA
GGAAGCCGGTGGTGAGATTGGGTGGAGAGACGTTGACTGTGTCGCAGGTGGCGGCG
ATCGCCGCCAGTGATAACGCTGGGGTGAAGGTGGAACTGTCGGAGACGGCGAGGGC
GGGGGTGAAGGCGAGTAGTGATTGGGTGATGGAGAGTATGAATAAAGGAACGGATA
GCTATGGTGTCACTACCGGGTTCGGAGCTACCTCTCACCGGAGAACGAAAGAAGGTG
GTGCTCTTCAGAAGGAGCTCATTAGATTCTTGAACGCCGGAATATTCGGTAATGGCA
CAGAATCAACCCACACACTTCCACATTCAGCCACAAGAGCAGCCATGCTTGTCAGAA
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TCTTGCATTGTTGTCGGAAGTGTTATCGGCGATCTTCGCTGAAGTTATGCAAGGTAAG
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CAAGATGTTAATTCCTTGGGATTGATTTCAGCAAGAAAAACAGCAGAATCAGTCGAG
ATCTTAAAACTCATGTCAACCACATACTTAGTAGCTCTATGTCAATCCATCGACTTGA
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ATTTTGTTCATAAATACTTTTTATGAGTTTTGAGGGTTTTGTAAGTCGCAACTCTCATG
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TGTACCTTTTGTTTCATAAAAAAAAAAAAAAAAAAAAAAAAA

Figure 7

Sequence I.D. No. 4

PAL2

MGSTEMEVDSHQNGERAEFCVKGDPLNWGMAAESLKGSHLDE
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LQKELIRFLNAGIFGNGTESTHTLPHSATRAAMLVRINTLLQGY
SGIRFEILEAITKFLNHNVTPFLPLRGTITASGDLVPLSYIAGLLT
GRANSKAVGPTGEVLNAEKAFAEAGVEGGFFELQPKEGLALV
NGTAVGSGMASMVLFDANVLALLSEVLSAIFAEVMQGKPEFTD
HLTHKLKHHPGQIEAAAIMEYILDGSDYVKAAQKVHEMDPLQ
KPKQDRYALRTSPQWLGPQIEVIRSSTKMIEREINSVNDNPLID
VSRNKALHGGNFQGTPIGVSMDNTRLAIAAIGKLMFAQFSELV
NDFYNNGLPSNLSGGRNPSLDYGFKGAEIAMASYCSELQFLAN
PVTNHVQSAEQHNQDVNSLGLISARKTAESVEILKLMSTTYLV
ALCQSIDLRHLEENLKSTVKNTVSLVAKKILTTGVNGELHPSRF
CEKDLLRVVDREYVFAYIDDACSATYPLMQKLRQVIVDHALN
NENDAGTSIFQKISEFEEELKAVLPKEVEGVRSAYESSTLTIPNR
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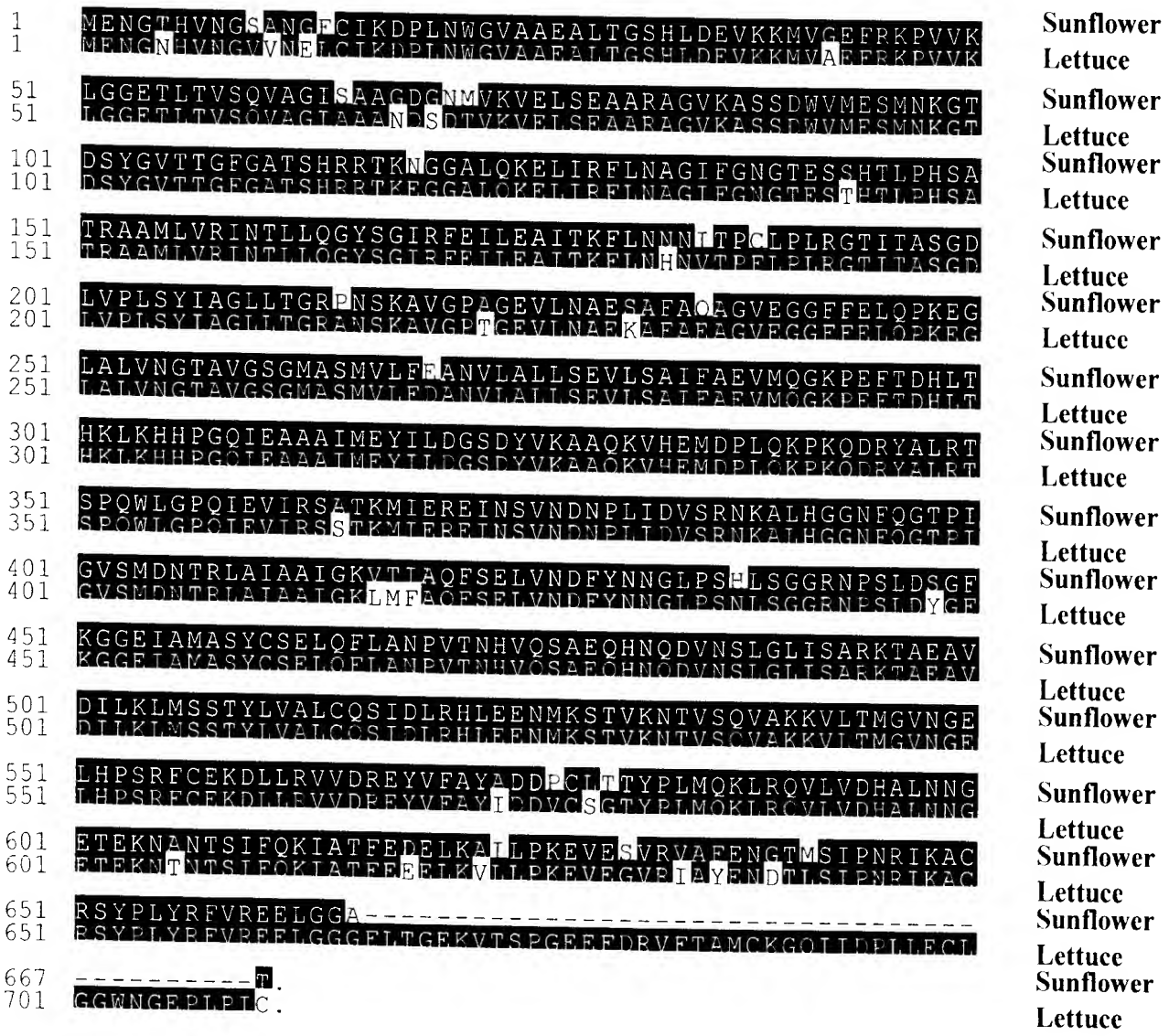
Figure 8

Sequence I.D. No. 2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1 MENGNHVNGVVNEFCIKDPLNWGVAAEALTGSHLDEVKKMVAEFRKPVVK Lettuce
51 LGGETLTVSQVAGISAAGDGNMVKVELSEAARAGVKASSDWVMESMNKGT Sunflower
51 LGGETLTVSQVAGIAAANDSDTVKVELSEAARAGVKASSDWVMESMNKGT Lettuce
101 DSYGVTTGFGATSHRRTKNGGALQKELIRFLNAGIFGNGTESSHTLPHSA Sunflower
101 DSYGVTTGFGATSHRRTKEGGALQKELIRFLNAGIFGNGTESTHTLPHSA Lettuce
151 TRAAMLVRINTLLQGYSGIRFEILEAITKFLNMNITPCLPLRGTITASGD Sunflower
151 TRAAMLVRINTLLQGYSGIRFEILEAITKFLNHNVTPFLPLRGTITASGD Lettuce
201 LVPLSYIAGLLTGRPNSKAVGPAGEVLNAESAFAQAGVEGGFFELQPKEG Sunflower
201 LVPLSYIAGLLTGRANSKAVGPTGEVLNAEKAFAFAGVEGGFFELQPKEG Lettuce
251 LALVNGTAVGSGMASMVLFDANVLALLSEVLSAIFAEVMQGKPEFTDHLT Sunflower
251 LALVNGTAVGSGMASMVLEDANVLALLSEVLSAIFAEVMQGKPEFTDHLT Lettuce
301 HKLKHHPGQIEAAAIMEYILDGSDYVKAAQKVHEMDPLQKPKQDRYALRT Sunflower
301 HKLKHHPGQIEAAAIMEYILDGSDYVKAAQKVHEMDPLQKPKQDRYALRT Lettuce
351 SPQWLGPQIEVIRSATKMIEREINSVNDNPLIDVSRNKALHGGNFQGTPI Sunflower
351 SPQWLGPQIEVIRSSTKMIEREINSVNDNPLIDVSRNKALHGGNFQGTPI Lettuce
401 GVSMDNTRLAIAAIGKVTFAQFSELVNDFYNNGLPSNLSGGRNPSLDYGF Sunflower
401 GVSMDNTRLAIAAIGKLMFAQFSELVNDFYNNGLPSNLSGGRNPSLDYGF Lettuce
451 KGGEIAMASYCSELQFLANPVTNHVQSAEQHNQDVNSLGLISARKTAEAV Sunflower
451 KGGEIAMASYCSELQFLANPVTNHVQSAEQHNQDVNSLGLISARKTAEAV Lettuce
501 DILKLMSSTYLVALCQSIDLRHLEENMKSTVKNTVSQVAKKVLTMGVNGE Sunflower
501 DILKLMSSTYLVALCQSIDLRHLEENMKSTVKNTVSQVAKKVLTMGVNGE Lettuce
551 LHPSRFCEKDLLRVVDREYVFAYADDPCLTTYPLMQKLRQVLVDHALNNG Sunflower
551 LHPSRFCEKDLLRVVDREYVFAYIDDVCSGTYPLMQKLRQVLVDHALNNG Lettuce
601 ETEKNANTSIFQKIATFEDELKAILPKEVESVRVAEENGTMSIPNRIKAC Sunflower
601 ETEKNTNTSIFQKIATFEEELKVLLPKEVEGVPIAYENDTLSIPNRIKAC Lettuce
651 RSYPLYRFVREELGGA---------- Sunflower
651 RSYPLYREVREELGGGELTGEKVTSPGEEFDRVFTAMCKGQILDPLLECL Lettuce
667 ----------T. Sunflower
701 GGWNGEPLPIC. Lettuce

Figure 9

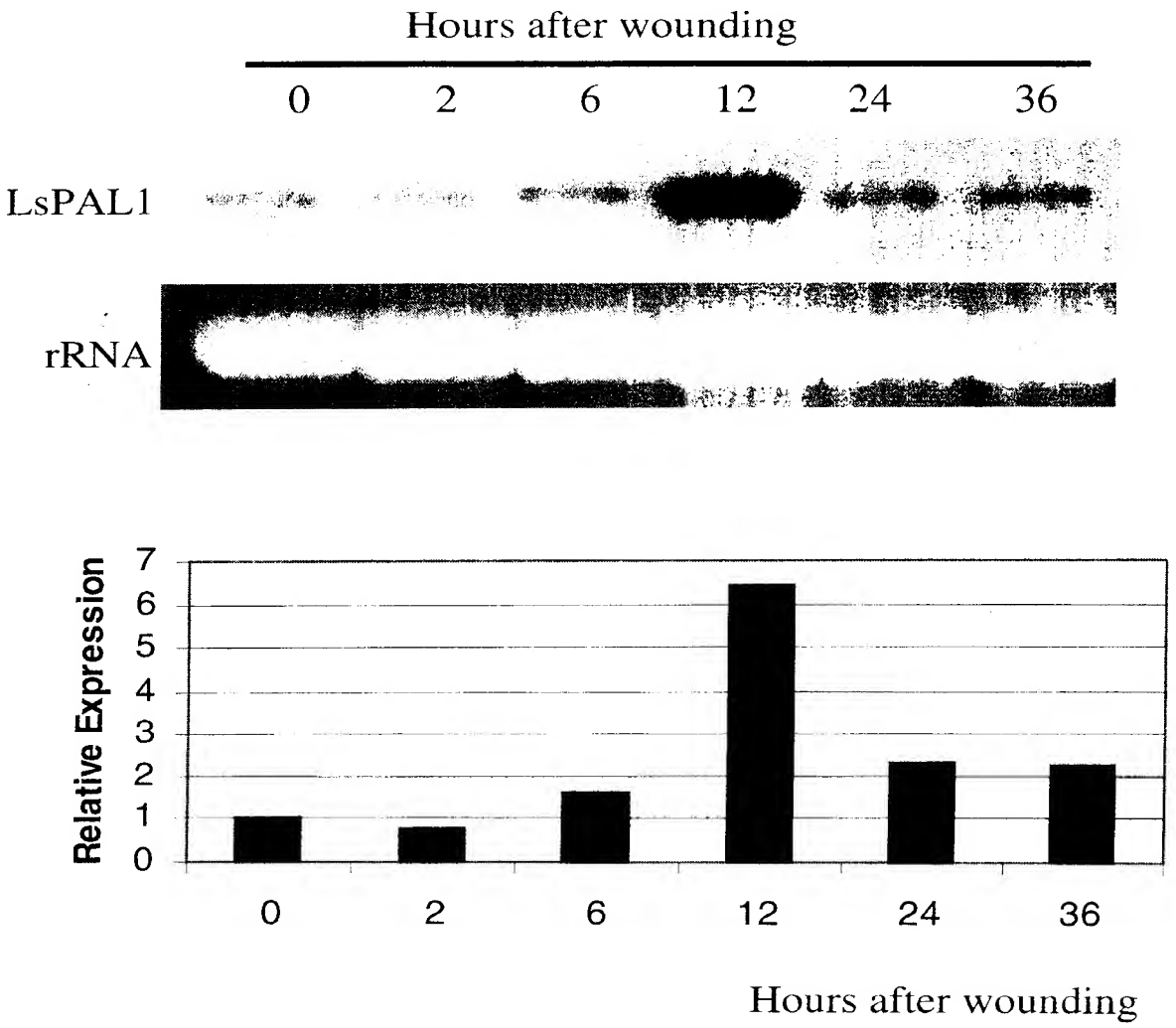
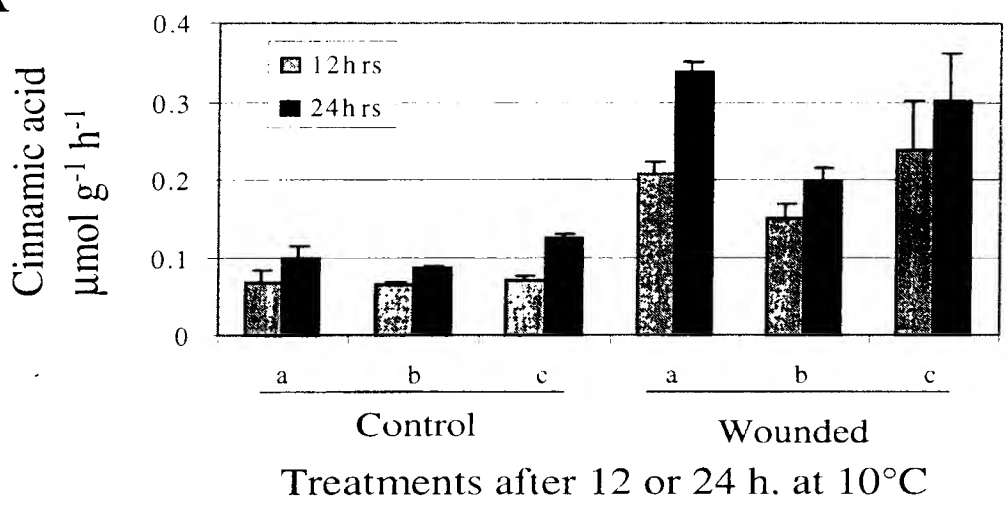

Hours after wounding
0
2
6
12
24
36
LsPAL1
rRNA
Relative Expression
7
6
5
4
3
2
1
0
0
2
6
12
24
36
Hours after wounding

Figure 10

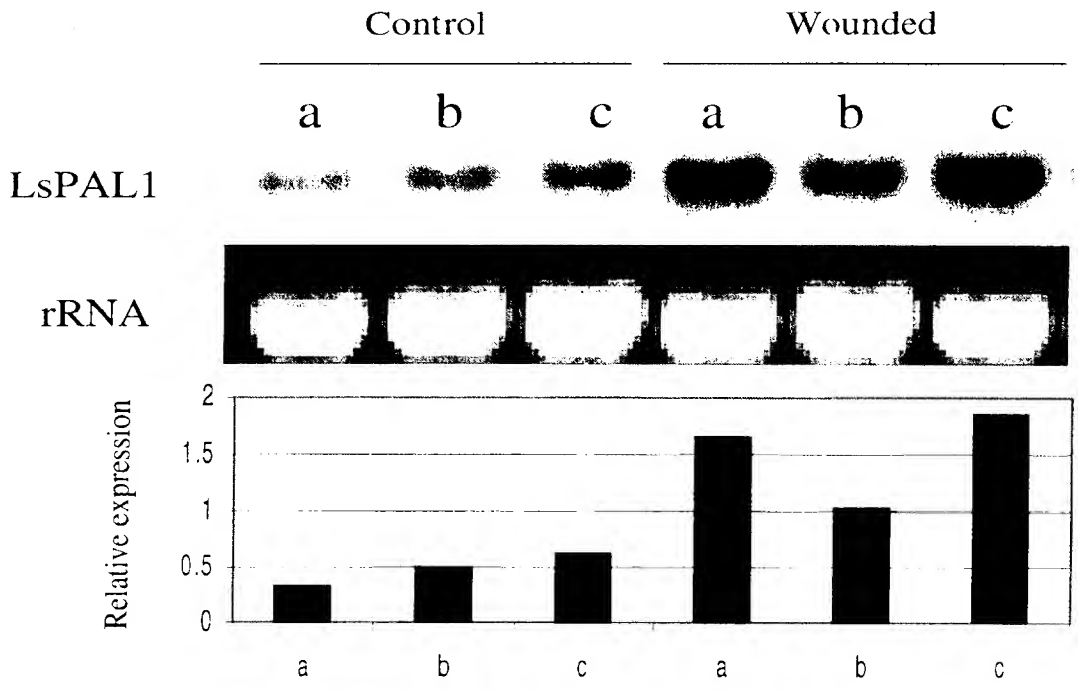
4

A



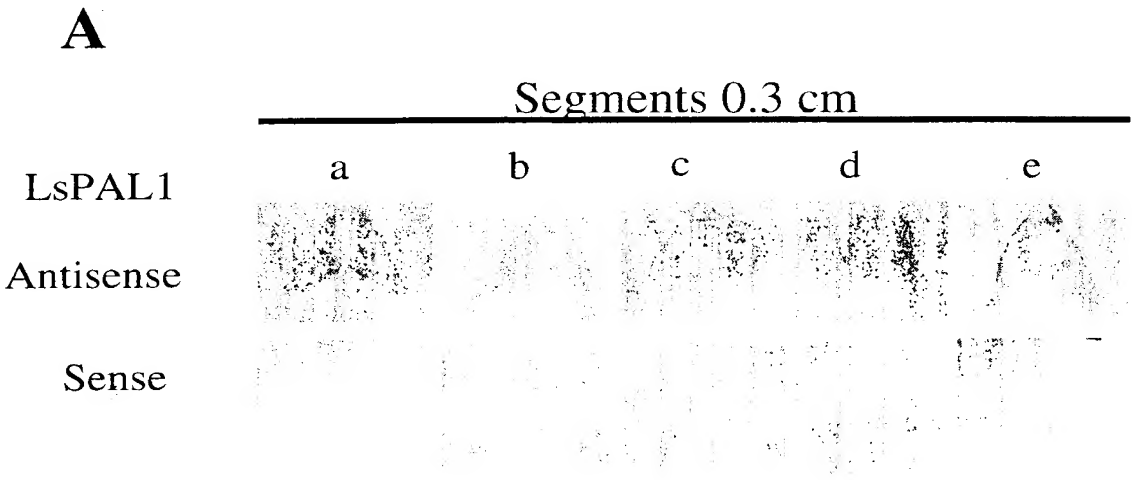
Treatments after 12 or 24 h. at 10°C

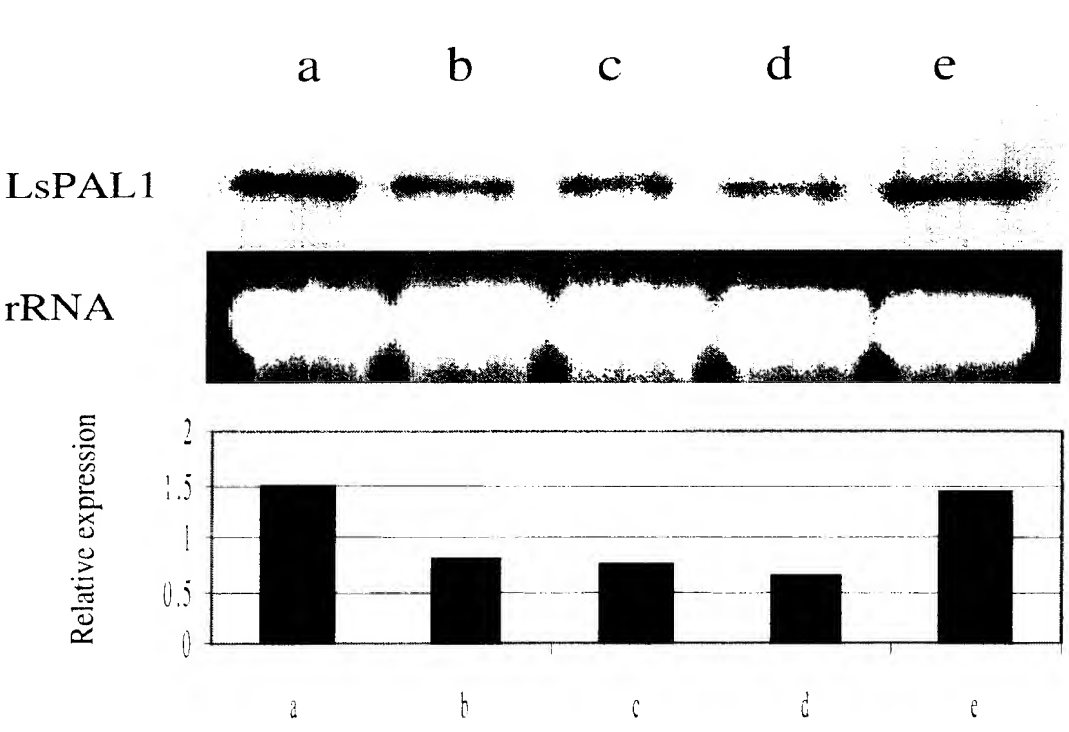
B



Treatments after 12 h. at 10°C

Figure 11





Northern from pieces in A

Figure 12